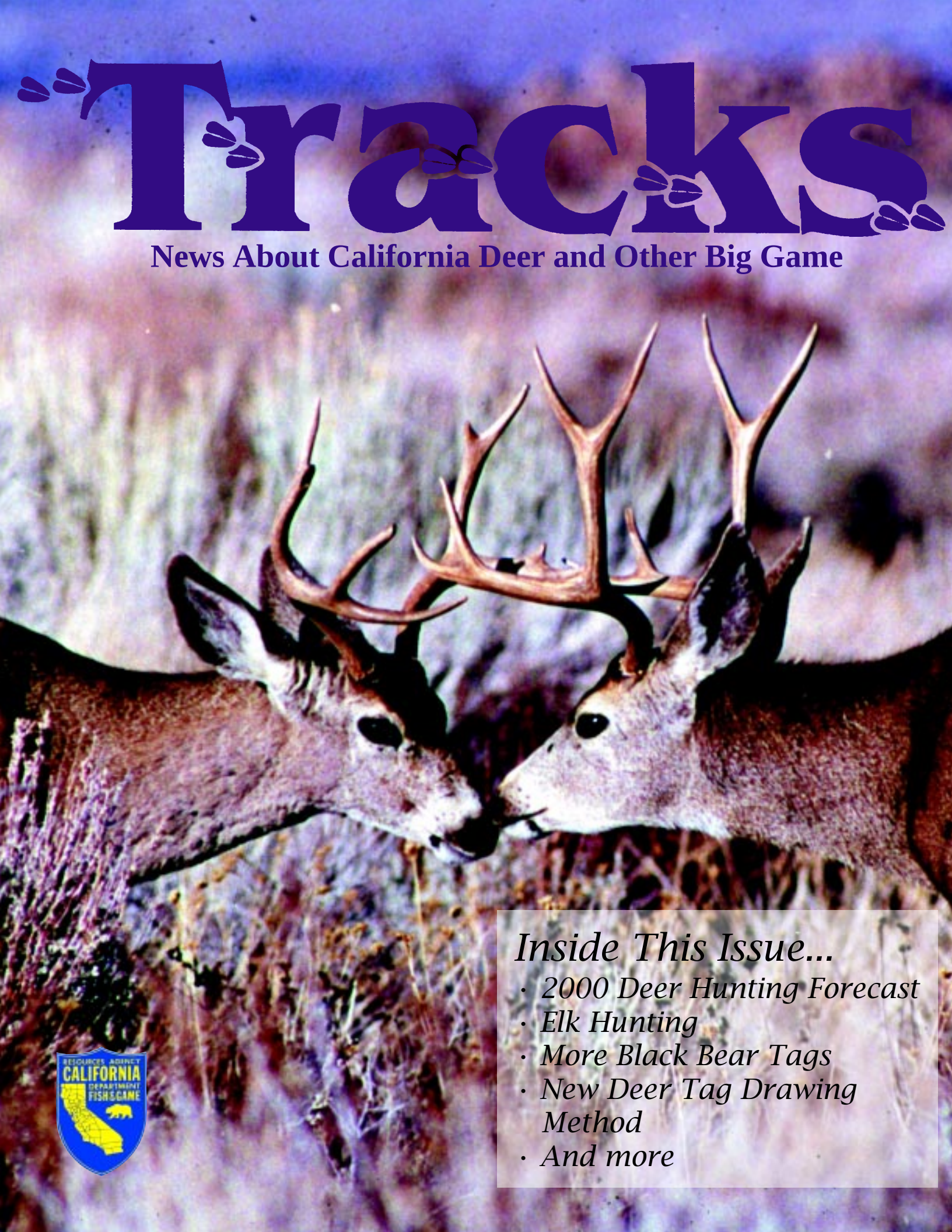
Tracks

News About California Deer and Other Big Game



Inside This Issue...

- *2000 Deer Hunting Forecast*
- *Elk Hunting*
- *More Black Bear Tags*
- *New Deer Tag Drawing Method*
- *And more*

TRACKS
2000 Issue #17

Tracks is published annually by the California Department of Fish and Game's
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Contents

2000 Deer Hunting Season Expected to Be a "Mixed Bag" .. 3
New Deer Hunting Guide Available July 1, 2000 5
Black Bears Marching Into History 6
Black Bear Harvest, Success Rate, Remain High 7
More Bear Tags For 2000 Season 7
Mountain Sheep, Mule Deer and Wild Burros in the Brush . 8
Study Measures Changes to X-2 Habitat 10
1999 Deer Antler Class Statistics 12
Fill Out the Hunter Survey; It's the Right Thing To Do! 13
Elk Hunting in California 14
California's Wild Pigs: In Hog Heaven 16
The Warden's Corner 17
Pronghorn: No Doe Tags This Year 17
DFG Implements New Deer Tag Drawing Method 18
DFG Seeks Hunter Input 19
Hunters Aid in Discovery of Parasite in Black Bears 20
New Web Site Tracks Hunting Activities 20
Auction Tags Raise Big Bucks For Wildlife 21
Grown & Harvested in California 22

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Cover photo by Don L. Johnson.

Fall 2000 Deer Hunting Season Expected to Be a "Mixed Bag"

Weather Impacts Forage, Herd Movements

by Paul Wertz

If only the Department of Fish and Game could add a "weather management branch" to its deer management program. Such a branch could provide spring and early summer rains to central coast and southern California zones to stimulate forage during the potential summer starvation period. For northern and eastern deer, the weather office could help with timely fall and winter storms – without severe cold or deadly snows – and do the same thing for migratory and north coast herds. Then, for hunters, the weather branch could arrange for cool, slightly wet conditions to kick off each deer zone hunting season.

There isn't a weather management branch, of course. So in spite of some favorable off-season weather patterns in most deer zones during the late 1990s, hunters have continued to run up against discouraging heat, choking dust and the quadraphonic sounds of leaves crackling under their boots as they search for deer during fall hunts. Well, here we go again. With the exception of some southland areas, most zones have been blessed with fair to generous precipitation to help forage growth. And most have a good carryover of bucks left behind by the poor hunting conditions of recent years. If weather cooperates, hunters this year have a good chance of elevating the statewide kill.

About 33,800 deer were killed in 1999, roughly the same estimate produced through DFG tag counts for the 1998 season. The past two season totals are about 5,000 below the 1997 statewide kill of 38,600. The numbers are a bit deceiving, however. The kill drop from 1997 to 1998 was blamed primarily on suffocating weather that stifled the hunting season in the huge, central coast A zone, where the buck harvest fell by 5,000. In 1999, the A zone recovered 3,000 of its 5,000 loss, but the statewide kill total was unchanged. Due in part to unfavorable hunting conditions, most of northern California – especially the 10 large B and C zones – showed decreases in buck kill.

Mule deer bucks in Modoc County. Photo by Terry Nelson, Outdoor California Photo Contest.

Thus, for the new millennium's first set of hunting seasons, buck kill could rise throughout the state, including the northern zones. In many areas, buck-to-doe ratios are providing reinforcement for the suggestion that the weather miseries of recent seasons have stashed a few extra bucks for this year's hunts. There is, however, a contemporary ceiling on the optimism, DFG biologists point out. The heydays of the 1950s and 1960s, when deer numbers seemed to have outgrown habitat, are more and more seen as an aberration brought on by early century logging and free fire that opened the forest floor to sunlight and a "megaton" production of forage.

Today, the drumbeat of deer habitat loss is resonating throughout western states, as it is in California. Change brought about by man's actions – especially in a state of 33 million people and counting – has even given rise to speculation among deer biologists that centuries-old migration habits of some deer herds may be changing because of fire-starved summer ranges thick with trees and vacation homes and woefully short on deer browse.

The long view, of course, is tomorrow's news. The present, in spite of all the concern about deer habitat trends, still has deer residing throughout California and hunters seeking the special enjoyment of trying to blend into the wilds of nature while pitting their limited human skills against the highly tuned defenses of deer. So, for the late summer and fall seasons of 2000, here is the DFG's view of what's in store for deer hunters by geographical area.

Northwestern California

In the deer assessment unit comprising the six B zones, hunters have the potential to realize improved success this year. As much as any place, a large part of the "big green" area promises to have additional bucks because of recent good winters and because the past two hunting seasons have been hot, dry and short on kill.

A little less enthusiasm exists for zones B3 and B5 than for the

(Please see Forecast — page 4)

(Forecast — continued from page 3)
rest of the northwestern area because fire has not improved the habitat much in recent years. The remainder of the zones, however, are believed to have stable to improving deer numbers.

In response to updated data provided by the DFG, the Fish and Game Commission approved a one-week cut off the tail end of the B6 season in western Siskiyou County. Biologists said the ratio of bucks per 100 does has fallen into single digits in two of the past three years.

B6 had become one of the more popular hunting areas of northern California after fires in 1987 burned about 287,000 acres of brush and trees, causing a rich growth of new plant life and a boom in deer numbers. The habitat is again thick and losing value.

The Cascade and Northern Sierra Regions

To the east, the four C zones are on a generally improving slope, especially when considering the buck-doe ratio data. Hunting restrictions of recent years have helped with the ratios, although total deer numbers may not be appreciably higher.

As in the B zones, weather will play a major part in hunter success. A couple of recent fires also should help.

Continuing east, the deer assessment unit covering "mulie" zones X1 through X5b can best be described as a mixed bag. Some areas seem to be sporting noticeably higher buck ratios; others have not yet rebounded from the 1992-93 winter kill.

Regardless, the systemic degradation of deer habitat seems to be a stronger force in holding down total deer numbers than nature's inclination to effect a post-'93 deer production boom. The brightest part of the northeastern hunting season picture this year may be the consistent reports of survey biologists and wardens that there are some large, stately bucks out there.

In the northeastern Sierra unit comprising zones X6a through X8, there is a clear contrast. The northern portion of the unit is rated as stable with signs of improvement. Not so for southern zones X7b and X8. Deer herds in both zones continue to suffer at the hands of human decisions. Fire suppression snuffs opportunity for summer range forage production while winter range housing developments – primarily in Nevada – displaces deer and eliminates deer food.

1999 opening day of X7a. Photo by Gary Aluis.

Back to the west, the Sierra slope zones D3 through D6 are described as "fairly stable" and highly weather-dependent. If the weather office can cook up some storms – as is the case in much of California – hunters will be taking home their share of venison. Deer are not viewed as abundant.

One change pending Fish and Game Commission approval could add some zest to the D3-D5 hunting experience this year. The DFG is proposing to offer a single "D" tag that would be good in all three of the zones as is the case with the generic "B" tag for the six northwestern B zones.

Northern Half of Zone A

Farther to the west, the deer assessment unit for the northern half of Zone A is described as a "core deer area" with recent low buck harvest levels and the potential for big improvements in deer kill this year. When it dampens up some, as one biologist said, "deer come out of the woodwork."

Many hunters sit patiently waiting for stormy weather and, if they get it, tend to hunt primarily toward the end of the season. Because wet weather was missing during the past couple of seasons, buck carryover is expected to be higher.

Southern Central Coast

There is a little less enthusiasm for the southern central coast unit comprising the southern half of Zone A and D13. Drought has been a problem and if it continues, a downturn in deer numbers and kill is expected – perhaps more so in 2001.

Unlike northeastern and eastern herds whose survival is most at risk during the cold winters, the south coast deer are at greatest risk during the summer, when food sources dry up. Drought conditions weaken fawn production, which takes its toll on deer kill a couple of years later.

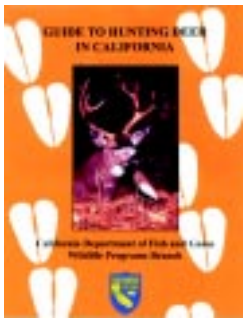
A good acorn crop could save the day for the south coast deer – and for hunters – but without it, a down cycle is likely.

The Southern Sierra

Eastward again, the southern Sierra zones D7 through D10 are believed to be holding a good carryover of bucks from the non-storm period of the late 1990s. Populations are stable and buck-doe ratios are described as being high.

These four zones may serve up more bucks and better classes of

New Hunting Guide Available July 1, 2000



The DFG has something new for deer hunters: *Hunting Deer in California* is a free publication that covers every aspect of deer hunting, from buying a tag to cooking venison.

Demand for the new publication is expected to be very high so, please, no telephone requests. To get a copy of the book, either mail or e-mail your name and address to:

Hunting Deer in California
Department of Fish and Game
1416 Ninth Street #1270
Sacramento, CA 95814
e-mail: pmontalv@dfg.ca.gov

You can also pick up a copy from DFG regional offices—see inside front cover of this publication for addresses.

Dueling Bucks...

These intertwined antlers were found in 1979 or early 1980 on the east side of Babbitt Peak in Sierra County. Babbitt Peak is south and east of the town of Loyalton (deer zone X-7a). The antlers are currently owned by Guilio Vanetti and were given to him by a logger who worked for a company which was helicopter logging on Babbitt Peak. A skid of logs was brought into a landing by a helicopter and the antlers were attached via the wire to the skid of logs.
Tracks reader John Donnelly, who brought these to the attention of Tracks editor Lorna Bernard, surmises that the two bucks were doing battle when they became entwined in wire and met their demise. Photo by Robert Waldron.

bucks, according to surveys. Weather is a big factor in these zones, to no one's surprise. With a little dampness, the harvest could be very good.

Over the Sierra to zones X9a through X12, the forecast is that hunters may run into some exceptional bucks and overall higher buck-doe ratios. Ironically, last year saw hunters immobilized by opening weekend snow that made hunting very difficult. Thus, X9a-X12 may have a good buck carryover – but *because* of storms, not due to a lack of them.

As in most assessment units, overall deer numbers and fawn production are not very encouraging in the southeastern Sierra. It is one of the areas where biologists are concerned that an increasing number of resident deer may be faring better than those trying to find a meal at the unburned higher elevation summer ranges.

Southern Desert Region

Due south in the desert zones D12 and D17, hunters face the byproduct of severe drought. Buck numbers have not improved and, more likely, have declined. Even meager storms can help grow some deer food, but such precipitation has been spotty of late.

The south deserts are considered marginal deer habitat for their special subspecies – the burro mule deer – and have become difficult to hunt because of reduced vehicle access under the Desert Protection Act. De facto deer refuges are the result, unless a hunter happens to own a camel.

South Coast

Swinging west again to the south coast zones D11, D14 through D16 and D19, hunters face a similar "droughty" condition. The opportunity to bag a buck is expected to be similar to the past couple of years, if not worse.

The good news is that the area has had some recent fires. But fires need to be followed by at least some precipitation to improve conditions for deer, and the storms haven't occurred. The bad news: herds are rated stable to declining, but can mount a comeback if rain arrives.

Paul Wertz is a public information officer with the Department's Region 1 office in Redding.

Black Bears Marching Into History

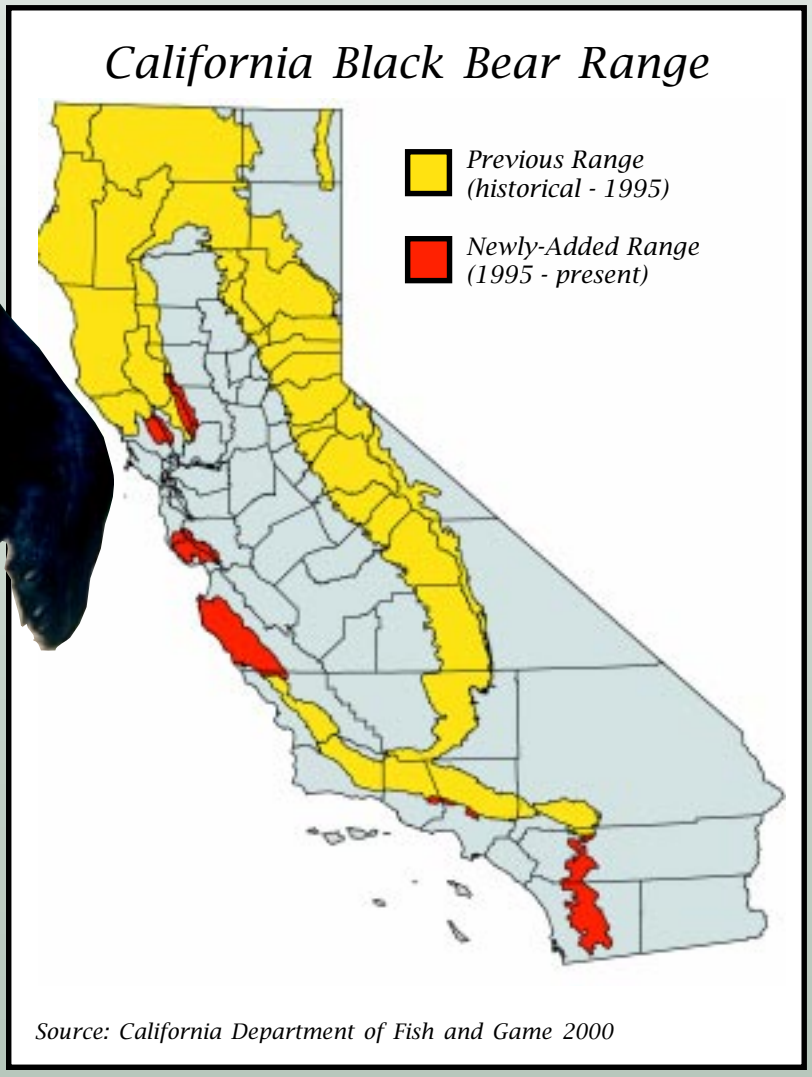
Have you heard about the black bear that was seen hanging around a Starbuck's coffee shop last summer? Or the black bears that were creating a nuisance in a southern California campground? Big deal, you may say; there's nothing unusual these days about seeing bears.

What is unusual, though, is that the Starbuck's coffee shop is in the Carmel Valley of Monterey County, where black bears have never been known to exist. The campground was in southern San Diego County–well south of historic California black bear range. Is this the result of a relocation effort?

Definitely, says Doug Updike, a DFG wildlife biologist and statewide black bear program coordinator. But it isn't a DFG-initiated relocation. "For at least the past 50 years, black bears have been slowly expanding into areas that were once occupied by the California grizzly bear," says Updike. "It's reached the point where we need to redraw the boundary lines for black bear range in California."

Black bears were not found in southern California when the California grizzly bear roamed the state. According to historic records, black bear and grizzly bear habitat didn't overlap. The less aggressive black bear occupied the state's foothills and mountains, while grizzlies ranged throughout the valleys and lowlands.

The map shows the expansion of black bears in recent years. In addition to casual observations, the expansion has been documented by researchers using "bait station surveys." The bait station consists of an open can of sardines hanging from a tree at bear-level. The ground below the bait is raked smooth. The bears, lured by the smell of the sardines, leave unmistakable evidence of their visit in the form of tracks, scat, and teeth marks (see photos, right).



According to the bait station surveys, black bear densities are still relatively low in the "new range" areas. But the newly drawn range map is an indicator that California's black bear population remains healthy, thriving, and expanding.

Black Bear Harvest, Success Rate, Remain High

by Cris Langner

A total of 1,833 black bears was harvested during the 1999 hunting season. Bear season was closed on November 29th, when the Department received 1,500 report cards from successful hunters. This was 28 days earlier than the closing date specified in the regulations. Hunters in northern California were responsible for 56.9 percent of the harvest with Siskiyou, Trinity and Shasta counties reporting 260, 242 and 208 bears, respectively. Statewide, 10.2 percent of the hunters were successful, up from 9.1 percent the previous year.

Success rates for particular hunting methods varied only slightly in 1999, (see Table), compared to previous years. Hunters with trailing dogs took 898 bears (48.9%), down 5% from 1998. Hunters took 621 bears (33.9%) while deer hunting, an increase of 5% over last year. Archery hunters accounted for 108 kills (6%), a one percent decrease from 1998, and hunters using guides took only 99 bears (5.4%) which is down 2.5% from last year. Successful hunters spent an average of four days in the field and 1,335 hunters (72.8%) used public land.

Cris Langner is a scientific aide with the DFG's black bear program.

Method of Black Bear Take Statewide - 1999

County	Used Dogs	While Deer Hunting	Used Guides	Used Archery	Total Harvest
Alpine	7	9	0	4	26
Amador	1	2	0	0	3
Butte	37	6	2	2	48
Calaveras	8	4	0	1	12
Colusa	0	1	0	0	2
Del Norte	10	22	0	1	53
El Dorado	14	10	0	2	29
Fresno	36	19	0	5	70
Glenn	4	15	0	1	27
Humboldt	82	51	0	2	164
Inyo	1	0	0	1	3
Kern	12	12	1	1	31
Lake	0	4	0	0	7
Lassen	23	6	4	4	30
Los Angeles	5	6	0	3	13
Madera	26	9	0	4	41
Mariposa	19	5	0	0	30
Mendocino	30	41	7	4	89
Mono	2	0	0	2	4
Nevada	2	10	0	0	15
Placer	15	12	0	0	32
Plumas	40	22	8	6	71
Riverside	0	1	0	1	2
Sacramento	0	0	0	0	0
San Bernardino	5	7	0	2	17
San Luis Obispo	0	0	0	0	1
Santa Barbara	5	13	0	1	18
Shasta	142	33	33	8	208
Sierra	15	13	3	4	33
Siskiyou	115	101	2	16	260
Stanislaus	0	3	0	0	4
Tehama	41	36	5	10	86
Trinity	122	100	14	11	242
Tulare	34	28	19	5	75
Tuolumne	30	10	1	3	46
Ventura	0	7	0	4	20
Yuba	8	2	0	0	13
Unknown	7	1	0	0	8
Totals	898	621	99	108	1833
% of Statewide Harvest	48.9	33.9	5.4	5.9	100

DFG file photos show a black bear bait station "before" ... and "after."

More Bear Tags For 2000 Season

Beginning with the 2000 hunting season, the Fish and Game Commission has removed the limit on the number of bear tags to be sold in California. Only 18,000 tags were sold during the previous two years.

Mountain Sheep, Mule Deer, and Burros in the Brush:

Flourishing Wild Burros Impact Habitats and Native Big Game

by Vernon C. Bleich and Nancy G. Andrew

Donkeys, feral asses, and wild burros: these are all common names used for the same exotic animals that are the legacy of the prospectors that flocked to the southwestern United States during the mid-1800s. Nearly 20 species of exotic ungulates, or hoofed-mammals, exist in free-ranging, or feral, populations in North America. Burros are, by far, the most successful of those non-native mammals.

Burros are the descendants of the African wild ass (*Equus asinus*), a creature native to Somalia and Ethiopia in northeastern Africa. They are physiologically well-adapted to the hot, arid environment of northeastern Africa, and burros have fared well in the deserts of the southwestern United States. Burros belong to the order Perissodactyla and the family Equidae, which include modern day horses and their ancestors. The Perissodactyla are ungulates that walk on an odd-number of toes, unlike the Artiodactyla, which are hoofed mammals that have even numbers of toes, such as deer and mountain sheep. Among the Equidae: horses, burros, and their close relatives walk on a single hoof; other Perissodactyls, such as rhinoceroses, walk on 3 toes.

Burros were first domesticated about 6,000 years ago, and were introduced to North America by Spanish explorers, likely in the mid-1500s. It was not until the latter half of the 19th century, however, that these exotic ungulates dispersed widely throughout the deserts of Arizona, Nevada, and California. Burros were the favored pack animals of desert prospectors hoping to "strike it rich." As the mining boom of the 1800s subsided, and railroads pushed westward across the Mojave and Sonoran deserts, the utility of these pack animals declined. As a result, many were abandoned by their owners and established free-living, or feral, populations. It is the offspring of those liberated animals that inhabit many desert mountain ranges today, and that are of concern to biologists working to conserve native wildlife.

In 1971, Public Law 92-195 was passed by the United States Congress. That legislation, known as the "Wild Free-Roaming Horse and Burro Act," provided unprecedented protection to feral horses and burros. Indeed, that legislation made it illegal to capture, brand, harass, or kill free-ranging horses or burros without proper authorization. Until passage of PL 92-195, shooting had been the primary means by which burros had been controlled. Without that source of mortality, populations of burros became larger, and their distribution increased. As a result, concern for possible impacts to native, large mammals, such as mountain sheep and desert mule deer, intensified.

Like most legislation that mandates new programs, allocated funds were inadequate to provide for the management of feral burros. During the 1970s, the Bureau of Land Management prepared the California Desert Plan. That multi-million dollar effort recognized the newfound legal status of feral horses and burros, as defined by Public law 92-195, and acknowledged the desirability of restricting populations of those exotic equids to specific parts of the California desert. The California Desert Plan identified a number of Herd Management Areas (HMAs) for burros, and specified the number of animals to be maintained in each of those HMAs. Unfortunately, funding

Wild burros (below) using artificial water sources called guzzlers, designed for use by desert mule deer (left) and other native wildlife. Photos taken by remotely triggered "Trailmaster" cameras set up by Leon Lesicka in the Cargo Muchacho Mountains of Imperial County. Wild burros (previous page); photo by Suzi Shizuko Leavens, Outdoor California Photo Contest Entry.

for implementation of the California Desert Plan has not been adequate to allow those management objectives to be met. As a result, many populations of burros have continued to increase in size, and burros have not been restricted to the specified HMAs.

Some well-known and successful examples of efforts to manage populations of burros have been implemented in California. These include efforts in Death Valley National Park, and at China Lake Naval Weapons Center. As a result of the California Desert Protection Act, passed in 1994, hundreds of burros also have been removed from Mojave National Preserve, in the eastern Mojave Desert. Attempts to manage numbers in the HMAs established by the California Desert Protection act have been less successful, largely because funding for those programs has been inadequate, and has limited the numbers of animals that can be processed each year. Because free-ranging burros can no longer be managed by lethal methods, animals removed from desert habitats must be "adopted" (a long and complicated process) by members of the public interested in maintaining them in captivity.

Impacts to Mountain Sheep

The potential impacts of uncontrolled populations of burros to desert habitats and, especially, to populations of mountain sheep in the southwestern United States have long been recognized. Following the most detailed analysis of potential conflicts yet undertaken, the late Rick Seegmiller (an authority on the ecological relationships of exotic burros and native mountain sheep) concluded that mountain sheep are too valuable and too limited in distribution to accept the risks of coexistence with exotic burros. Seegmiller recommended the removal of those exotic equids from areas inhabited by mountain sheep, as well as areas to which mountain sheep might be translocated in the future. Seegmiller reported that, in general, burros used habitats that were less steep than those used by mountain sheep. Nevertheless, he felt that mountain sheep could become restricted in distribution to the steepest, most rugged terrain where impacts to vegetation would be less than on more gentle slopes used heavily by burros. It is our experience in southeastern California, however, that burros have successfully exploited forage and, recently, water sources in terrain that many biologists formerly felt was habitable only by mountain sheep.

Impacts to Desert Mule Deer

Another native species, with which habitat overlap with free-ranging burros is much greater than for mountain sheep, is the desert mule deer. These large, native ungulates are well-adapted to living in desert washes and the gently rolling intermountain areas of the Sonoran Desert in southeastern California, areas that are used heavily by burros. The impacts of burros to forage resources used by mule deer have not been described in detail, but are expected to be similar to, if not exceed, impacts to forage used by mountain sheep. Similarly, dietary overlap between burros and mule deer has not been quantified thoroughly, but burros unquestionably have the potential to reduce availability of forage preferred by native mule deer. Whether or not "competition" for forage from burros would impact mule deer populations is uncertain, but the potential exists for such to occur.

(Continued on page 11)

Study Measures Changes to X-2 Habitat

Devil's Garden Research Has Implications for California Land-Use Practices and Deer Hunting Opportunities

by Bob Schaefer

The interstate deer herd migrates more than 75 miles from its summer range in southern Oregon to spend winters in a remote region of northeastern California called the Devil's Garden. The Devil's Garden consists of over 1,000 square miles of juniper savannah, shrub steppe and ponderosa pine habitats in the X-2 deer zone. This area is managed largely by the U.S. Forest Service and has experienced profound changes in habitats and deer populations in the last 50 years. Population estimates for these Rocky Mountain mule deer have declined drastically from over 30,000 in the 1950s to less than 5,000 today. The migration of this once highly abundant deer herd was once witnessed during a severe snow storm in 1938 by wildlife researcher Allan C. Randle who was inspired to write "*...it was a brief but spectacular thing to see, and the suddenness with which these deer appeared and disappeared is almost unbelievable.*" The decline of this deer population has had major impacts on hunting opportunities, as tag quotas for this zone have declined from 1,600 bucks in 1983 to a low of 80 in 1996 and 1997. Tag quotas for this area were up to 150 in 1999, and at press time tags for 2000 are expected to remain unchanged from last year (subject to approval by the Fish and Game Commission).

The major decline of the interstate herd in the latter half of this century has mirrored similar reductions in mule deer populations throughout the western United States, and has biologists looking at historic trends in vegetation and habitat capabilities. In 1945, due to concerns over the severe impacts on range conditions being caused by high winter deer populations and excessive levels of livestock grazing, the Interstate Deer Herd Committee was formed with sportsmen, state and federal biologist and local ranchers, to develop recommendations for improving range conditions. A farsighted approach taken by the committee was to place permanent vegetation survey plots throughout the interstate deer herd winter range so that trends in vegetation and overstory canopy could be monitored. These plots were surveyed every 5 years until 1977. Thanks to funding provided by deer tag revenues, the plots were surveyed again in 1998, providing the unique opportunity to document 50 years of vegetation change on the Devil's Garden. Results of the investigation showed that as juniper and pine overstory increased significantly, understory shrubs of critical importance to mule deer such as bitterbrush and sagebrush have been substantially reduced. As the forest canopy becomes increasingly closed, understory vegetation is excluded by increased competition for sunlight, soil moisture, and nutrients, leaving habitats less capable of supporting deer. For juniper, not only is its overstory becoming increasingly closed, but its rate of expansion on the Devil's Garden is concerning. Fire suppression and livestock grazing are major factors contributing to the spread of juniper, and its ability to convert shrub habitats to juniper woodlands has been implicated in other states for the loss of big game habitats. Also showing a significant expansion across the winter range is cheatgrass. This highly invasive, non-native grass was introduced to the United States from the Mediterranean region and has the ability to out-compete and replace native

The Devil's Garden in 1948 (above) and 1998 (below). Note the pronounced overstory growth. DFG file photos.

grasses and shrubs, further reducing the overall forage quality for deer. Although vegetation changes on summer range in Oregon have not been looked at and likely play a role in the decline of this deer herd, the long-term vegetative changes detected on the Devil's Garden clearly indicate a reduced capability of this winter range to support deer.

Deer have not been the only wildlife species on the Devil's Garden to experience population reductions. It has long been known that deer are "indicator species," meaning that because so many other wildlife species have similar habitats needs, tracking trends in deer abundance is a good indicator of population trends for other species. A decline in bird populations on the Devil's Garden has been attributed to the encroachment of juniper and loss of shrub

habitats. The dramatic decline of sage grouse, a once highly abundant game species on the Devil's Garden, has the potential to be listed under the Endangered Species Act. Although long-term patterns of vegetation change on the Devil's Garden are consistent with declining trends in deer, researchers are now looking at other species that may be experiencing similar population reductions.

The Department of Fish and Game manages deer by monitoring populations trends and providing hunting opportunities. The management of habitats that ultimately determine the survival and productivity of deer on the Devil's Garden is the responsibility of the Modoc National Forest. The vegetative patterns illustrated by this investigation are largely the result of long-term land management practices that have not emphasized deer habitats. Many uses of public lands are important economically to U.S. Forest Service budgets and local economies, and land management decisions are often driven by other commodities such as livestock, grazing and timber harvest. Deer hunters can also be an important economic contribution: a recent study indicated that dollars expended to local merchants in Modoc County declined from over $5 million in 1987 to less than $500,000 in 1997. These declines are a direct result in the loss of productive habitats for deer, and the corresponding reductions in deer populations and hunting opportunity. The Department is using information on vegetative patterns from the Devil's Garden to provide comments on the impacts to deer and other wildlife species from proposed land management actions. To become more informed on the process of public lands management on the Devil's Garden, contact the Modoc National Forest at 530-233-5811, or write to Modoc National Forest, Forest Supervisor, 800 West 12th, Alturas, CA 96101.

Bob Schaefer is a DFG wildlife biologist in Modoc County.

Wild burros in Death Valley, California. Photo by Ron Jurek.

(Burros — Continued from page 9)

In southeastern California, water is an extremely limited resource for exotic and native ungulates. During a recent drought, burros began to exploit water sources that formerly they had not used. One method of controlling the distribution of burros in the past has been to fence them off of water sources. During a recent period of drought, the authors designed and tested a new-style fence that was effective in allowing native deer and sheep to access water sources, but that prevented use of those water sources by burros. This fence design is lightweight, unobtrusive, and highly effective. Although the fence has been installed at numerous water sources outside of newly designated wilderness areas, construction of such fences inside of "wilderness" established by the California Desert Protection Act has been restricted severely. Nonetheless, wildlife managers from the California Department of Fish and Game and interested sportsmen-conservationists will persist in their efforts to limit the distribution of burros through the use of such fences, at least until populations of those feral equids are more successfully controlled by responsible federal agencies.

There are several large-scale planning efforts currently underway in the deserts of southeastern California. Ultimately, those plans will define land use and conservation strategies for the majority of Sonoran and Mojave desert habitats in the state. Included in those plans will be the intent to manage burros in localized areas and in a meaningful way, so as to minimize impacts to native species of wildlife. Such plans, no matter how well-intentioned, will be successful only if funding is adequate to allow full implementation. Concerned citizens must do their part to ensure that those planning efforts result in meaningful contributions to conservation. Contacting your Congressional representatives, and asking them to ensure that management of feral burros receives their highest priority for adequate funding, is a logical way to ensure that impacts of these exotic ungulates to native mountain sheep and mule deer will be minimized.

Dr. Vern Bleich is a Senior Wildlife Biologist with the Department's newest administrative area (Region 6), which incorporates the inland deserts and eastern Sierra Nevada; he is stationed in Bishop, Inyo County. Ms. Nancy Andrew is an Associate Wildlife Biologist with Region 6, stationed in Brawley, Imperial County. The authors share common concerns about the impacts of burros and wilderness management policies on wildlife conservation in southeastern California.

1999 Deer Antler Class Statistics

The following table shows the total reported number and percent of forked horn-or-better bucks by antler class and zone or hunt. *Data provided by Russ Mohr, associate wildlife biologist with DFG's deer program in Sacramento.*

Zone or Hunt	2 pt. Bucks	3 pt. Bucks	4 pt. Bucks	4+ pt. Bucks	Total Buck Kill
Archery-Only	50.4%	26.8%	18.1%	4.7%	127
A Zone	67.2%	25.5%	6.5%	0.8%	4908
Zone B1	54.2%	33.2%	11.4%	1.2%	1474
Zone B2	59.4%	29.0%	10.3%	1.3%	1423
Zone B3	54.3%	33.3%	10.7%	1.6%	243
Zone B4	60.2%	30.8%	9.0%	0.0%	221
Zone B5	57.2%	33.3%	8.6%	0.9%	327
Zone B6	49.0%	34.6%	13.9%	2.6%	625
Zone C1	46.3%	36.4%	15.7%	1.6%	313
Zone C2	49.7%	34.3%	15.4%	0.7%	143
Zone C3	43.4%	37.7%	16.4%	2.5%	281
Zone C4	57.4%	33.2%	8.6%	0.8%	476
Zone D3	59.0%	25.9%	12.4%	2.8%	541
Zone D4	44.3%	29.8%	20.6%	5.3%	131
Zone D5	58.0%	28.7%	11.4%	2.0%	973
Zone D6	53.2%	33.5%	11.6%	1.8%	571
Zone D7	56.8%	28.0%	11.6%	3.6%	507
Zone D8	59.9%	24.5%	13.4%	2.2%	314
Zone D9	63.0%	21.5%	14.8%	0.7%	135
Zone D10	72.0%	24.0%	2.0%	2.0%	50
Zone D11	65.8%	25.5%	7.5%	1.2%	161
Zone D12	23.7%	36.8%	31.6%	7.9%	38
Zone D13	68.1%	22.3%	8.7%	0.9%	229
Zone D14	47.2%	31.5%	16.7%	4.6%	108
Zone D15	62.5%	32.5%	5.0%	0.0%	40
Zone D16	68.3%	28.1%	3.6%	0.0%	167
Zone D17	66.7%	14.3%	16.7%	2.4%	42
Zone D19	73.5%	24.5%	2.0%	0.0%	49
Zone X1	47.4%	32.7%	17.4%	2.5%	447
Zone X2	19.0%	35.7%	33.3%	11.9%	42
Zone X3a	37.4%	39.6%	19.8%	3.3%	91
Zone X3b	47.4%	33.3%	17.4%	1.9%	213
Zone X4	37.2%	43.6%	15.4%	3.8%	78
Zone X5a	29.6%	33.3%	25.9%	11.1%	27
Zone X5b	36.2%	34.0%	24.5%	5.3%	94
Zone X6a	46.6%	19.3%	27.3%	6.8%	88
Zone X6b	62.3%	26.2%	11.5%	0.0%	61
Zone X7a	32.1%	32.1%	32.1%	3.8%	78
Zone X7b	52.0%	32.0%	16.0%	0.0%	25
Zone X8	48.5%	36.4%	15.2%	0.0%	33
Zone X9a	51.5%	31.9%	14.7%	2.0%	204
Zone X9b	40.5%	35.7%	21.4%	2.4%	42
Zone X9c	55.6%	30.6%	11.1%	2.8%	72
Zone X10 P1	50.0%	20.0%	30.0%	0.0%	30
Zone X10 P2	55.6%	16.7%	16.7%	11.1%	18
Zone X12	50.6%	32.0%	15.7%	1.7%	178
Hunt A1	65.3%	24.5%	10.2%	0.0%	49
Hunt A2	67.6%	26.9%	5.6%	0.0%	108
Hunt A3	62.5%	28.1%	9.4%	0.0%	32
Hunt A5	25.0%	62.5%	12.5%	0.0%	8
Hunt A6	72.7%	9.1%	18.2%	0.0%	11
Hunt A7	37.5%	37.5%	25.0%	0.0%	8
Hunt A8	33.3%	66.7%	0.0%	0.0%	3
Hunt A9	50.0%	0.0%	50.0%	0.0%	4
Hunt A11	84.6%	7.7%	7.7%	0.0%	13
Hunt A12	66.7%	16.7%	16.7%	0.0%	6
Hunt A13	45.5%	18.2%	27.3%	9.1%	11
Hunt A14	100.0%	0.0%	0.0%	0.0%	3
Hunt A15	100.0%	0.0%	0.0%	0.0%	2
Hunt A16	61.3%	19.4%	16.1%	3.2%	31
Hunt A17	50.0%	50.0%	0.0%	0.0%	2
Hunt A18	66.7%	33.3%	0.0%	0.0%	3
Hunt A20	45.5%	45.5%	9.1%	0.0%	11
Hunt A21	0.0%	100.0%	0.0%	0.0%	1
Hunt A22	71.4%	14.3%	14.3%	0.0%	7
Hunt A24	33.3%	50.0%	16.7%	0.0%	6
Hunt A25	60.0%	40.0%	0.0%	0.0%	5
Hunt A26	30.0%	50.0%	20.0%	0.0%	10
Hunt A27	100.0%	0.0%	0.0%	0.0%	1
Hunt A30	25.0%	50.0%	25.0%	0.0%	4
Hunt A31	60.0%	30.0%	10.0%	0.0%	10
Hunt G1	54.4%	30.9%	14.1%	0.6%	469
Hunt G3	16.7%	22.2%	55.6%	5.6%	18
Hunt G6	43.8%	56.3%	0.0%	0.0%	16
Hunt G7	50.0%	25.0%	25.0%	0.0%	4
Hunt G10	60.0%	25.0%	15.0%	0.0%	40
Hunt G12	20.0%	20.0%	20.0%	40.0%	5
Hunt G19	100.0%	0.0%	0.0%	0.0%	1
Hunt G21	100.0%	0.0%	0.0%	0.0%	2
Hunt G37	0.0%	53.3%	40.0%	6.7%	15
Hunt M3	35.0%	25.0%	35.0%	5.0%	20
Hunt M4	0.0%	0.0%	100.0%	0.0%	2
Hunt M5	0.0%	100.0%	0.0%	0.0%	2
Hunt M6	100.0%	0.0%	0.0%	0.0%	1
Hunt M7	80.0%	0.0%	20.0%	0.0%	5
Hunt M8	42.9%	14.3%	28.6%	14.3%	7
Hunt M9	40.0%	40.0%	10.0%	10.0%	10
Hunt M11	36.4%	36.4%	27.3%	0.0%	11
Hunt MA1	57.1%	28.6%	14.3%	0.0%	7
Hunt MA3	66.7%	33.3%	0.0%	0.0%	3
Hunt J1	37.5%	50.0%	12.5%	0.0%	8
Hunt J3	57.1%	42.9%	0.0%	0.0%	7
Hunt J4	50.0%	41.7%	8.3%	0.0%	12
Hunt J7	75.0%	25.0%	0.0%	0.0%	4
Hunt J8	0.0%	50.0%	50.0%	0.0%	2
Hunt J9	100.0%	0.0%	0.0%	0.0%	1
Hunt J10	100.0%	0.0%	0.0%	0.0%	5
Hunt J11	100.0%	0.0%	0.0%	0.0%	3
Hunt J12	0.0%	12.5%	62.5%	25.0%	8
Statewide	58.0%	29.3%	11.1%	1.6%	17,475

Fill Out the Hunter Survey; It's the Right Thing To Do!

If you receive a survey in the mail from the California Department of Fish and Game, don't throw it away! The future of hunting could depend on your participation!

Okay, that may be overstating our case just a bit. But it is true that the DFG depends on information from its annual Game Take Hunter Survey because it is the Department's *only* source for harvest information for many game species. Successful big game hunters are required to mail their tags to the Department, but there is no equivalent method of reporting success among upland game bird hunters.

The DFG has been conducting the annual game take hunter survey for more than 30 years. It's been a reliable way of estimating how much effort the average hunter has to exert to harvest his/her game, and how successful he/she was during the season. This information, combined with population surveys, helps managers set seasons and bag limits that make for an enjoyable hunt without overharvesting the state's game birds. This information is also of critical importance in the DFG's environmental documents addressing hunting of upland game.

In recent years, however, the random survey seems to be getting lost in the barrage of junk mail that inundates us all. Hunters simply aren't returning the surveys the way they used to. The Department has been persistent about mailing surveys again and again to those who don't respond the first time, but with disappointing results. Mailing costs go up, and the survey response rate continues to decline.

Last January the DFG sent survey forms to 19,000 randomly-selected hunters–approximately six percent of the state's total population of licensed hunters. Responses trickled in. Several months later, the DFG mailed the survey again to those who did not reply. Again, the response was underwhelming. Those who still didn't respond received a third survey form in the mail in June. Despite the repeated mailings, only about half of the recipients responded–three percent of the total hunting population.

Generally speaking, the smaller the sample size, the less reliable the data. Survey professionals call this "non-response bias" and it works like this: People are more likely to respond to a survey if they have information they're eager to share. In this case, successful hunters are more likely to respond than those who either didn't hunt or weren't successful.

If you receive a survey form this year, please: fill it out and send it back! Even if you did not hunt, or didn't harvest any of the species listed on the survey, it is important that you complete and return the form.

When you do return it, please don't tear off the serial number; it allows to DFG to electronically track who responded and who didn't. The survey information (including names and addresses) is *never* sold or given away, so survey respondents don't need to worry about privacy issues.

"Uncle Buck"
Illustration by Jeremy Taylor.

In the past, some survey respondents have hand-written the following complaint: "I already gave you this information when I bought my hunting license. Why are you asking for it again?" Hunters are probably referring to a survey conducted by the U.S. Fish and Wildlife Service that is attached to the hunting license application. That information focuses on migratory bird species only; it doesn't include questions about resident game bird species and hunter effort.

If you receive a survey form in the mail, please complete it and return it as soon as possible. This will help to ensure your name is taken off of the list for the follow-up mailing. If you have any specific questions about the survey, you can contact DFG biologist Sam Blankenship at (916) 653-1759.

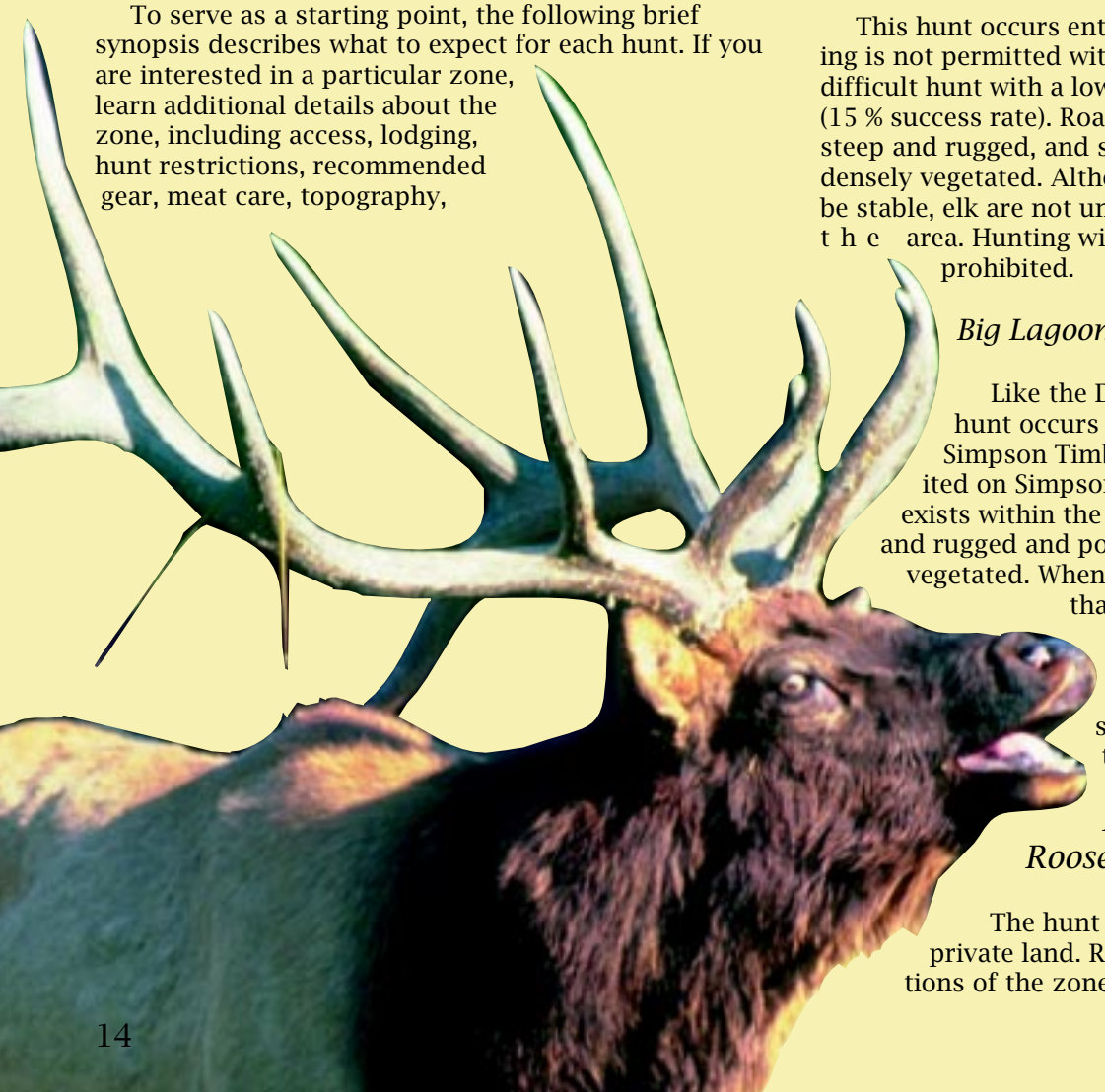
A final report is prepared each year for the previous year's harvest data. The report is available to the public, and can be accessed on the DFG's internet web page at http://www.dfg.ca.gov.

Elk Hunting: No 'Guarantee of a Full Freezer' *by Jon Fischer*

As California's elk population continues to grow, public hunting opportunities are expected to increase in the immediate future. This year the DFG recommends issuing 286 tags for public elk hunts in 11 zones. Although this is a 20 percent increase over the 1999 season, demand for elk tags is also increasing. Last year, the DFG received more than 15,000 applications for elk tags. Successful applicants were comparable to lottery winners, and many experienced the hunt of a lifetime. Others returned disappointed, in part because the hunt didn't match their expectations.

Elk hunting conditions vary tremendously from zone to zone—and year to year. What do you know about California's public elk hunts, and what are your expectations if you are fortunate enough to draw an elk tag? You can improve the quality of your hunting experience by being well prepared for the hunt—and this effort begins before you submit the application!

To serve as a starting point, the following brief synopsis describes what to expect for each hunt. If you are interested in a particular zone, learn additional details about the zone, including access, lodging, hunt restrictions, recommended gear, meat care, topography, vegetation, weather conditions, and the distribution of elk within the zone. You can eliminate lots of the disappointing surprises by investigating the hunts. Finally, examine your expectations and recognize that an elk tag doesn't guarantee a full freezer; it is merely an *opportunity*. By its very nature, hunting has an unpredictable element associated with it that is out of your control.



Del Norte Roosevelt Elk Hunt

This hunt occurs entirely on private land and camping is not permitted within the hunt boundary. Although road access is good throughout the zone, topography is very steep and rugged, and portions of the zone are densely vegetated. Be prepared to cover some tough country, especially if you get an elk down. Hunter success has averaged almost 90 % over the last five years.

Klamath Roosevelt Elk Hunt

This hunt occurs entirely on private land and camping is not permitted within the hunt boundary. This is a difficult hunt with a low probability of hunter success (15 % success rate). Road access is limited, topography is steep and rugged, and some parts of the zone are densely vegetated. Although the population appears to be stable, elk are not uniformly distributed throughout the area. Hunting within Redwood National Park is prohibited.

Big Lagoon Roosevelt Elk Hunt

Like the Del Norte and Klamath hunts, this hunt occurs on private land owned by Simpson Timber Company. Camping is prohibited on Simpson property. Limited road access exists within the hunt area; topography is steep and rugged and portions of the zone are densely vegetated. When this hunt last occurred (more than 10 years ago), success was approximately 25 percent. As with the other northern California elk hunts, season dates were selected to coincide with the rut to optimize hunting opportunity.

Marble Mountains Roosevelt Elk Hunt

The hunt zone contains both public and private land. Road access is fair in some portions of the zone. The terrain varies tremen-

dously, with some portions that are densely vegetated and rugged. Hunter success has ranged from 47-68 percent since this hunt was approved in 1996. Elk are not uniformly distributed throughout the hunt zone. The population is still growing in the hunt zone, and vast portions contain few elk. You should become familiar with the area if you plan to hunt there. The last weekend of the elk season overlaps opening weekend of deer season in this zone.

Siskiyou Roosevelt Elk Hunt

The hunt zone contains both public and private land. Elk distribution and hunter success can change dramatically from year to year. Hunter success has ranged from 10-68 percent since this hunt was established. In some years, a significant number of elk use private land (with access restricted and/or fees required) during the season. Road access is good for most of the public land within the zone. Terrain is mountainous; characteristic vegetation is mixed conifers and oak woodlands. Elk numbers appear to be increasing in and near the hunt zone. The last weekend of elk season overlaps opening weekend of deer season in this zone.

Shasta Rocky Mountain Elk Hunt

Elk can be found on both public and private land within the hunt zone. You should be very familiar with this zone if you want to hunt elk here. The low quota of one bull and four cow tags has remained stable for this zone; hunters typically take two or three elk each year. Elk season partially overlaps with deer season in this zone.

Owens Valley Tule Elk Hunt

This year, elk hunting will occur in the Bishop, Independence, Tinemaha and Lone Pine zones of the Owens Valley. The Owens Valley hunts (particularly Lone Pine and Tinemaha) are a good choice for someone hunting elk for the first time. Most of the hunt area is public land owned by the City of Los Angeles. Access is generally good, but camping is prohibited on city land, and some leased land within the Bishop zone is inaccessible. Virtually all of the hunting occurs on the open valley floor. Regulated hunting is used to control elk population numbers in the Owens Valley, and if you draw a tag for this hunt, you could encounter elk daily during the hunt. There is a high degree of antler breakage for most bulls in the Owens Valley, and hunters looking for an unblemished rack will have to be very selective.

Cache Creek Tule Elk Hunt

For the past few years, the DFG has recommended only two bull tags for the Cache Creek hunt because a significant portion of the hunt zone consists of private land with restricted access. However, the status of elk is improving on public land within the hunt zone and land access conditions have improved with the recent acquisition of some key parcels. As a result, the DFG is recommending the addition of a few cow tags for this year. Still, hunters should be prepared for primitive hunt conditions and much of the area will be accessible only by foot or horseback.

Grizzly Island Tule Elk Hunt

This is a popular hunt because of the open, flat terrain. A high success rate (above 80 %) is anticipated for this hunt. However, the hunt zone consists only of DFG land and elk may not be pursued onto private property. Elk hunters at Grizzly Island are encouraged to bring along a non-hunting companion to assist with the hunt and act as spotter. Grizzly Island's reputation for producing large bulls is well established.

La Panza Tule Elk Hunt

The La Panza herd is the largest tule elk herd in California. However, prospective applicants should be very familiar with the hunt area and/or be prepared to pay access or guide fees for this hunt. The hunt zone consists of oak woodland and chaparral vegetation typical of Central California's coastal foothills. Finding elk on public land in the hunt zone can be challenging because about two-thirds of the La Panza elk herd is on private land, either within or outside the hunt zone. The DFG has issued 12 bull and 12 cow tags for this hunt, and overall success has ranged from 30-50% annually. But bull tag holders have fared much better than cow tag holders, probably because cows are in larger groups and have been difficult to approach. The La Panza elk season overlaps with other seasons, including wild pig and some upland game. This year DFG is proposing to extend each elk hunt period (to 23 days) in hopes of improving hunter opportunity.

Fort Hunter Liggett Tule Elk Hunt

The Fort Hunter Liggett hunt was implemented in 1996. The hunt zone consists of specific areas (designated by the Army as fields) within the 165,000 acre installation. Primary use of the base is for military training. The base commander may take emergency action to modify the areas open for hunting and/or season dates because of military training needs. Tags for the Fort Hunter Liggett hunt are equally distributed between military and civilian personnel for each training period. Tagholders must purchase an annual hunting pass from the base (for approximately $100). The hunt zone consists of oak woodlands, chaparral and vegetation associated with the Coast Range. Success for bull tagholders has ranged from 80-100 %, while success for cow tagholders has ranged from 40-80 %. The herd contains a minimum of 400 elk.

Jon Fischer is a wildlife biologist and statewide coordinator of the DFG's elk program.

California's Wild Pigs: In Hog Heaven

Wild pigs: they're exciting to hunt, the season is open year-round, tags are cheap, there's no bag limit, and the meat doesn't get any tastier. So, what more could you ask for? How about more opportunities to hunt them on public land?

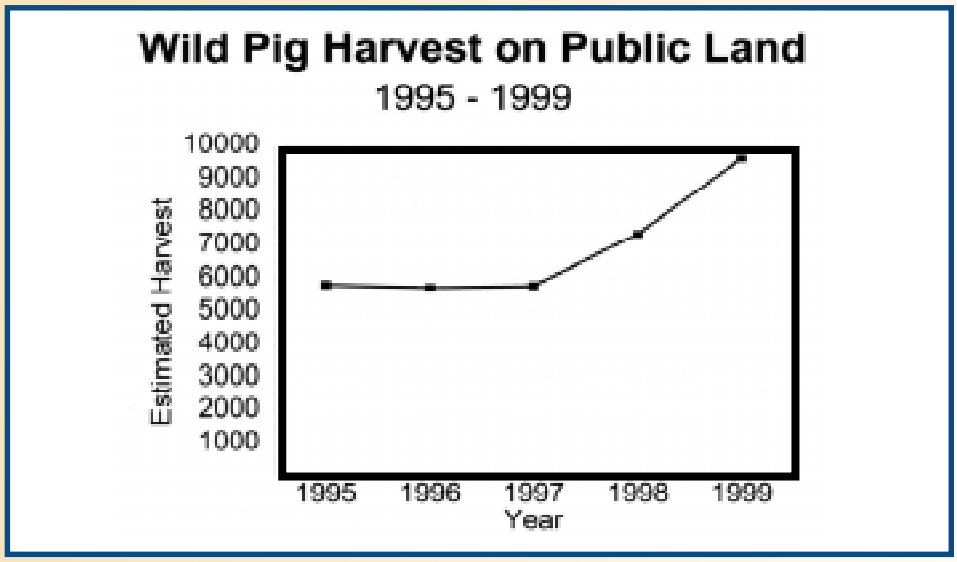
"That's been one of the toughest objectives to accomplish," says Doug Updike, the DFG's wild pig program coordinator. "But, as it turns out, wild pigs are making that happen on their own."

The wild pig range expansion, reported by Tracks last year, is continuing. The benefit to hunters is obvious when you look at the harvest data. The table, right, shows the estimated harvest on public land has increased, from 5,805 in 1997, to 9,645 in 1999–up 66 percent.

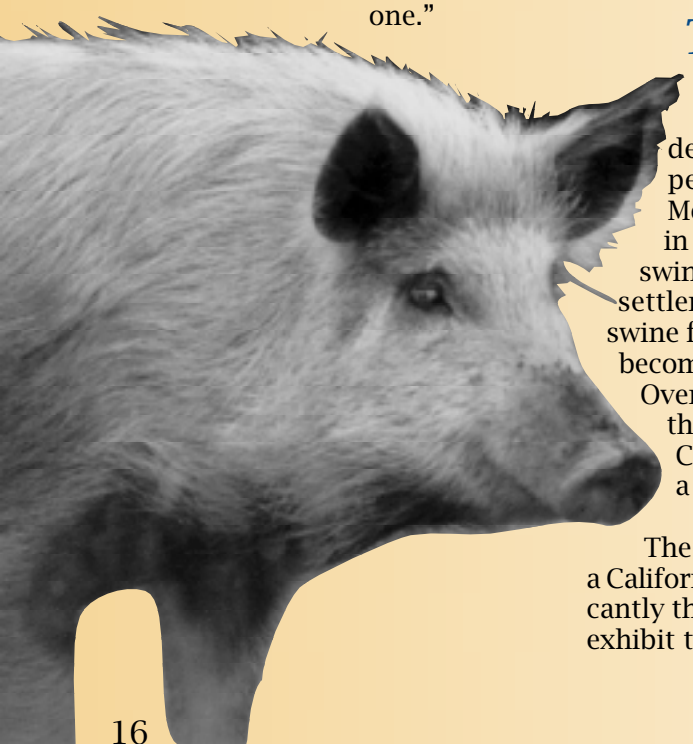
Of course, the wild pig harvest has increased statewide by a similar percentage, meaning the harvest is up on private land as well. "But the statistics on public land should be pretty exciting to hunters," says Updike, "because it means more hunting opportunities for everyone."

"What public land? Where?" you ask. Monterey County continues to produce the highest reported take on public land. The counties that show dramatic increases in the reported wild pig kill include Tehama, Fresno, Kern, Merced, San Luis Obispo, Santa Barbara, Solano and Sonoma counties. "These are the areas to pay attention to," says Updike, "because they may become very important pig hunting areas."

Habitat conditions continue to flourish, and so do wild pig populations. According to Updike, "Wild pigs have an amazing potential to reproduce. To illustrate the point: start with one breeding pair of pigs, which can produce two litters of up to 15 piglets each year, and assume zero mortality. At that rate, two pigs could turn into three-quarters of a million pigs over a three-year period. That's a lot of ham."



Red, Black, Striped or Spotted, They're All "California Wild Pigs"



California's wild pigs are descendants of the European wild boar, introduced to Monterey County, California in the 1920s; and domestic swine, imported by European settlers in the 1700s. Domestic swine foraged freely, eventually becoming semi-wild, or "feral." Over time, they interbred with the European boar. Today's California wild pig is actually a wild boar/feral pig hybrid.

The physical characteristics of a California wild pig vary significantly throughout the state. Some exhibit the long hair and snouts, small erect ears and angular shaped bodies of their wild boar ancestors, while others have short hair, long floppy ears, and a barrel-shaped body. Colors range from solid black to red, striped, grizzled or spotted.

No matter what the color or shape, all California wild pigs seem to possess those characteristics that make them such a challenge to hunt: what they lack in sharp eyesight they make up for with their keen senses of smell and hearing. Now, if they would all just move to public land ...

The Warden's Corner

by Liz Schwall

This year, the award for "unsportsmanlike" behavior goes to a Shasta Lake resident for an alleged act of animal cruelty that stunned even seasoned DFG wardens.

The DFG received information that a live bear was being kept in a culvert trap in a remote area of Shasta County. Culvert traps, which are essentially large "box" traps, are usually set by DFG biologists in order to live trap and gather biological information on bears. This trap, however, had not been set by a DFG employee. Wardens immediately set out to locate the bear and were shocked to find a live bear, in very poor condition, locked in what appeared to be a stolen culvert trap. The bear, believed to have been in the trap for up to eight days, stood inches deep in its own feces and urine. The wardens had information that the bear was apparently being kept alive until the opening day of the bear archery season. The wardens gave the bear several quarts of water but then made the tough decision to leave the bear in the trap for one more day in an attempt to catch the suspect.

This DFG culvert trap is like the one used to illegally capture a bear. File photo.

The officers then began an around the clock "stakeout," watching the trap and the adjacent cabin. Their efforts were eventually rewarded when the suspect arrived at the trap early Saturday morning, the opening day of the bear season. The suspect, an ex-felon, was promptly arrested and charged with felony cruelty to animals. He was also charged with possessing firearms, which is illegal for convicted felons to do. Ironically, this was not the first time that wardens had information regarding this individual. For several years, local wardens had heard rumors that he used a stolen trap to capture bears. Allegedly, he would then shoot the bears inside the trap when the season opened. After his arrest, the suspect remained in jail in lieu of $10,000 bail. The disposition is pending.

Liz Schwall is a DFG warden and statewide coordinator of the CalTIP program.

Pronghorn: No Doe Tags This Season

The latest data is in, and it doesn't bode well for hunters hoping for a pronghorn antelope tag. The pronghorn population is down slightly from last year, prompting wildlife officials to play it safe by cutting tag allotments.

The DFG's northeastern California winter census counted 4,330 pronghorn, a decline from the previous year and the third consecutive year below 5,000 animals.

As a result, the DFG has proposed cutting the allotment of buck tags and eliminating doe tags for the 2000 hunting season. This year, 220 buck tags will be sold, compared to 350 buck and 100 doe tags for the 1999 season.

In 1992, the state's pronghorn antelope population was the highest it had been in more than a century with nearly 8,000 animals. The population took a nosedive during the harsh 1992-93 winter and has yet to recover to its 1991 high.

According to Jon Fischer, a DFG wildlife biologist and statewide pronghorn antelope program coordinator, "Since the '92-'93 winter, pronghorn populations have not recovered to the extent the DFG had expected. The recent survey gives cause for concern, but not alarm."

Researchers are still optimistic for the long-term recovery of the state's pronghorn. In the meantime, what is the treatment prescribed by wildlife managers? "Less hunting pressure," says Fischer, "and more patience."

DFG Implements New Deer Tag Drawing

by Karen Madrigal

California deer hunters may soon have a better chance of hunting in their first-choice deer zone, thanks to a new tag drawing system being implemented for this June's deer tag drawing. DFG changed to the new drawing system, called "draw-by-choice," in response to hunter concerns about the old system, where it was possible for some hunters to receive premium tags with their second or third choice over hunters who selected the same zone with their first choice.

DFG looked at several alternatives to the old system, including preference point and bonus point systems, before implementing the new draw-by-choice system. "No system is perfect," said Mike Vader, chief of the DFG's License and Revenue Branch, which oversees the deer tag drawing process. "All the different methods we looked at had pros and cons. The draw-by-choice system was attractive to us not only because we believe it will satisfy more hunters but also because it was the only one that could be implemented at no added cost to hunters," Vader said. "Whenever you have a situation where there are more applicants than there are tags, you will have some hunters who are unhappy because they didn't get drawn," Vader said. "This change is part of our on-going efforts to refine the drawing system so that it is fair, cost-effective and satisfies the majority of hunters."

How It Works

Under the old drawing system, all applicants competed in one drawing, regardless of their first, second or third tag choices. The computer assigned each applicant (or party) a unique random number, drew applicants in order by random number, and awarded to each person (or party) his or her first available tag choice. Odds of success were impossible to calculate because they were determined mainly by the applicant's computer-generated random number: the lower your number, the sooner you were drawn, and the better your chance of receiving one of your three tag choices before the quota filled. Also, it was possible for some applicants to receive tags as their second or third choice before others requesting that tag as their first choice.

A dominant Rocky Mountain mule deer buck showing typical signs of nutritional stress during the rut. DFG file photo.

With the new system, separate drawings are held for each zone and hunt and applicants compete only with others listing the same tag choice in the same order of preference. In this type of drawing, more tags will be available to first-choice applicants because they are no longer competing with second- and third-choice applicants. The drawings work like this:

· After the application deadline, when all applicant information has been entered, the computer assigns each person (or party) a *unique random number.*

· Just prior to drawing, the computer *sorts all applications* according to first tag choice.

· The computer conducts *separate first-choice drawings* for each zone and hunt (tags are awarded to applicants in random number order, starting with the lowest number, until each tag quota fills).

· After the first round of drawings, unsuccessful applications are sorted again by *second tag choice* and the computer conducts a second round of drawings for any zones and hunts with tags remaining.

· If tags remain after the second round of drawings, unsuccessful applications are sorted once again by *third tag choice* and a third round of drawings is held.

· Applications not drawn in the third round are either *submitted for refund or returned* to the hunter with a list of available tags so that he or she may reapply.

Drawing Tips

In this type of drawing, your first tag choice carries the most weight because most tags go to first-choice applicants. You can improve your odds of being drawn by choosing a zone or hunt with a higher tag quota and fewer applicants. Your second and third choices carry less weight because the computer will only consider them after all first-choice drawings are completed and only if tags are still available. Using your third choice for a tag issued on request (A, B, C or D Zone or Archery-only tags) can save time if you are not drawn for a premium tag and wish to reapply for an available tag.

Karen Madrigal is an analyst with the DFG's License and Revenue Branch.

Pros and Cons of Various Big Game Drawing Methods

Drawing Type	How It Works	Pros	Cons
Preference Points	• Each year that a hunter is unsuccessful in drawing his tag of choice, he receives a preference point • Tags are awarded on the basis of who has the lowest random number and the most preference points • Ex: Colorado	• Hunters who have waited the longest are awarded their tag of choice • Hunters can better predict how long they will have to wait for the tag they want • Hunters are rewarded for their persistence • Implementing this system would likely please hunters who have been lobbying for preference points	• First-time and re-entering hunters are discouraged from applying • It may take many years for hunters to build up enough points to draw high-demand areas (hunters may become impatient and drop out) • More expensive and labor-intensive; may cause increases in tag fees
Modified Preference Points	• Half the tags for each hunt are awarded through a preference point drawing and the other half are awarded in a random drawing • Hunters not successful in the first draw have a chance at being drawn in the second draw • Ex: Oregon	• Hunters can better predict how long they will have to wait for a tag • Hunters are rewarded for their persistence • Won't discourage new hunters as much as the true preference point system	• Harder for hunters to understand • Hunters may have to wait longer for high-demand hunts than through the true preference point system • An arbitrary tag quota split would be necessary, which may lead to controversy • More expensive to track preference points; may increase tag fees
Bonus Points	• Each applicant is assigned a random number for each bonus point • The lower the random number, the better the hunter's chances are for being awarded one of three tag choices • Each year that a hunter is unsuccessful in drawing the tag of choice, an additional "bonus point" is given • Ex: Nevada and Utah	• This system will improve the odds of being drawn • It is still possible for a first-time hunter to receive a tag • Hunters can be rewarded for persistence • It is easy to understand	• A first-time hunter could get drawn over someone who has earned many bonus points • It can take hunters years to get drawn (unpredictable) • Exceptionally unlucky hunters may NEVER get drawn • More expensive to track bonus points
Draw-by-Choice	• All hunt applications are sorted by the hunter's first choice zone • Hunters are awarded tags, in order of lowest random number, until quotas are filled or all applications have been processed • Remaining applications would be sorted by 2nd and 3rd choice until all hunts are filled or until all applications are processed	• All hunters who have selected the same hunts will compete together in the same draw • Should reduce the number of complaints that some hunters receive premium tags with their second or third choice • It could be implemented this year at no additional cost to hunters or the Department • This system has similar application procedures to preference points; this may help hunters if the Department changes to a preference point system	• 80-90% of tags will be issued in the 1st round of the draw, making hunters' 2nd and 3rd choices largely moot • May not significantly improve odds of getting drawn for most popular hunts

DFG Seeks Hunter Input on Big Game Draw, Deer Management

Want to help shape the future of deer hunting in California for the next millennium?

Then plan to attend one of over a dozen "stakeholder" meetings that the Department of Fish and Game will be hosting this year beginning in July at a location near you.

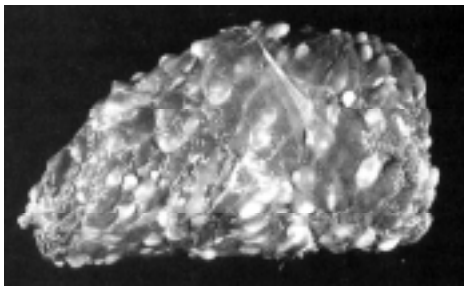
The meetings will be held on weekday evenings or weekend days at a variety of locations throughout California.

A flyer with meeting dates and locations will be included with this year's deer tag drawing notices, and can also be obtained by calling (916) 653-7203 or checking the department's web site at www.dfg.ca.gov.

Hunters Aid in Discovery of Parasite in California Black Bears

Researchers in California are working to get a handle on a parasite that has apparently been spread from humans to black bears. The parasite is a tapeworm (*Taenia solium*), known as the pork tapeworm, and is commonly found in other countries. It was uncommonly reported in the United States, but recently has been shown to be on the rise.

The tapeworm has a complex life cycle that includes the adult stage of the tapeworm residing in the human digestive tract and shedding eggs in feces; and the larval stage, which forms small cysts in muscle tissue of suitable hosts (typically a pig). This stage, known as cysticercosis, produces cream-colored bumps on the meat that are clearly visible (see photo). If these cream-colored bumps or cysts are then ingested by a human, the cycle begins again. Apparently, the internal workings of a bear resembles the pig close enough that the larval stage finds it a suitable host in which to form cysts. Since 1990, the larval stage of this tapeworm, *Cysticercus cellusae*, has been identified in black bears in at least four northern California counties.



Bear meat infected with larvae from the tapeworm Taenia solium.

According to Dr. Pamela Swift, a DFG wildlife veterinarian, "We don't consider this to be a major health threat to humans or wildlife, but bear hunters need to be aware of it for several reasons: first, they need to know how to recognize meat infested with the cysts so they can properly prepare the meat for human consumption (thorough cooking) or to properly dispose of the meat if a severe infestation is present; and, second, they can assist in documenting the distri-

CDA Ad

New Web Site Tracks Hunting Activities

WesternHunter.com is a new Internet based hunting information service provided by the former publishers of *California Hunter Magazine*.

You can sign-up for the free weekly e-mail at the WesternHunter.com home page at www.westernhunter.com. You get the latest hunting information for the western states with heavy emphasis placed on California.

bution of bears affected by the parasite. After all," says Dr. Swift, "it was hunters who initially brought it to our attention."

The first report came from a hunter in 1990 who killed a bear in Siskiyou County. While skinning the bear, the hunter discovered that the meat was covered with the larval cysts. Three other infected bears have since been reported: one each in Tehama (1993) Shasta (1994), and Sierra (1998) counties.

"The number and geographic separation of the cases suggests that infection of the bears was not due to a single contamination," says Dr. Jerold Theis, a researcher with the U.C. Davis School of Medicine. According to Dr. Theis, humans are the likely source of the contamination.

To put it delicately, you know the saying about what bears do in the woods? Apparently some humans, infected with the tapeworm, have been doing that, too. The California black bear, a notorious scavenger, ingests the tapeworm eggs and becomes an unwitting host.

Although it doesn't look very appetizing, the meat from infected bears is safe to eat so long as it's thoroughly cooked. According to Dr. Theis, "Meat cooked to the well-done stage will kill the tapeworm larvae. Smoked or jerked meat should be avoided, because the preparation process doesn't create a high-enough temperature to kill the larvae."

Researchers believe the infection rate among California bears is extremely low, judging from the fact that only four infected bears have been reported in the last ten years. "Each time we receive a new report, we know where we need to address the problem in humans," says Dr. Theis.

Hunters who find any suspicious-looking bear meat should contact the DFG's Wildlife Investigations Lab at (916) 358-2790.

Fund-raising Tags Generate Big Bucks For Wildlife

Each year, selected non-profit organizations sell big game tags at their fund-raising events.

California's wildlife benefits from the auction revenue, since all of the money raised through the sale of the tags goes into the DFG's management programs for those species. Below, by type of tag, are the results of the auctions completed as of Tracks' press date:

Fund-Raising Tag	Host Organization	Amount
Bighorn Sheep	Foundation for North American Wild Sheep	$76,000
Tule Elk, Grizzly Island	Rocky Mountain Elk Foundation, National Chapter	25,000
Tule Elk, Grizzly Island	Mule Deer Foundation, Central Coast Chapter	33,000
Tule Elk, Owens Valley	Foundation for North American Wild Sheep	12,000
Golden Opportunity Deer**	Mule Deer Foundation, National	9,000
Golden Opportunity Deer**	Mule Deer Foundation, Central Coast Chapter	9,500
Golden Opportunity Deer**	Foundation for North American Wild Sheep	19,500
Golden Opportunity Deer**	Rocky Mountain Elk Foundation, Central San Joaquin Valley Chapter	7,000
Golden Opportunity Deer**	California Deer Association, San Jose Chapter	pending auction on 5/6
Open Zone Deer*	Rocky Mountain Elk Foundation, Sacramento Chapter	4,800
Open Zone Deer*	California Deer Association, Chico Chapter	8,500
Open Zone Deer*	Mule Deer Foundation, Sacramento Chapter	5,000
Open Zone Deer*	Rocky Mountain Elk Foundation South Central Coast Chapter	3,300
Open Zone Deer*	California Deer Association, Salinas Chapter	7,000
Pronghorn Antelope***	Mule Deer Foundation, Central Coast Chapter	3,250
Pronghorn Antelope***	Foundation for North American Wild Sheep	4,500
Pronghorn Antelope***	Rocky Mountain Elk Foundation, Central San Joaquin Valley Chapter	3,500
Pronghorn Antelope***	California Deer Association, San Jose Chapter	pending auction on 5/6

* Open Zone Deer Tag: Valid for all zones as well as additional deer hunts and area-specific archery hunts within specified season dates and methods of take.
** Golden Opportunity Deer Tag: Valid statewide from July 8, 2000 through January 31, 2001.
*** Pronghorn tags are for the 2001 hunting season.

Grown & Harvested

Ron Kunzler, Del Norte Elk Hunt

Steve Cleland, Zone X9-C

Suzanne Sagardia, X12

Patrick Hart,Round Valley Junior Buck Hunt

Nellie Carnero, Hunt G-3

In California

You love to share your photos with us, and we love to publish them! Here are a few we recieved from the 1999 hunting season. Congratulations to the successful hunters ... and good luck in the upcoming seasons!

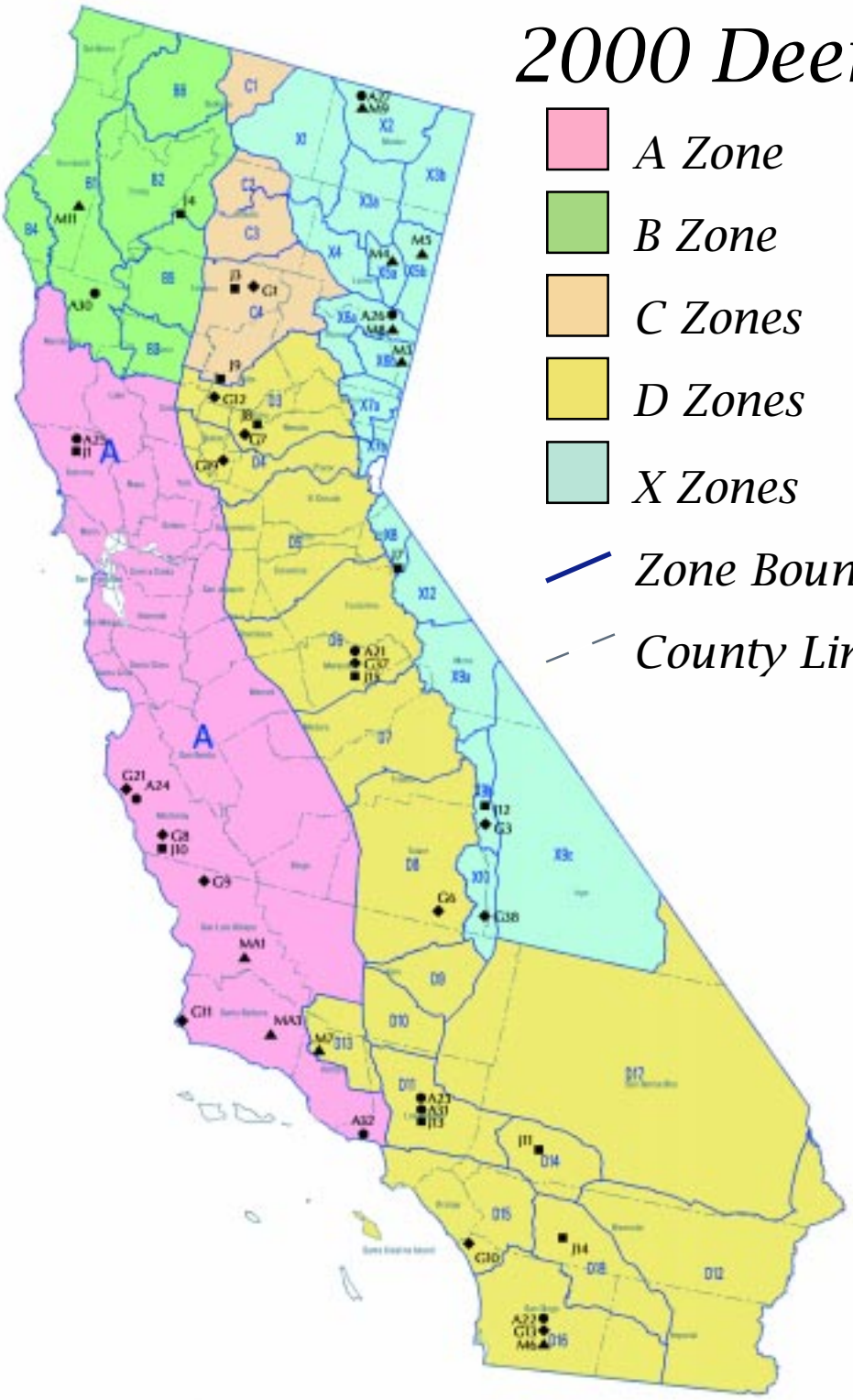
Jake Hagedorn, Zone D13

Kellen Vawter, Round Valley Junior Buck Hunt

Roger Rowland, Zone X2

Paul Kunzler, Del Norte Elk Hunt

2000 Deer Zone Map



- A Zone
- B Zone
- C Zones
- D Zones
- X Zones
- Zone Boundaries and Codes
- County Lines